BROWNFIELD REDEVELOPMENT ASSESSMENT REPORT

FOR

**JEFFERSON/RIOPELLE**

**PROPERTY**

DETROIT, MICHIGAN

**REVISED**

MARCH 31, 1997

REPORT PREPARED BY: Nabil Seif DATE: 3/31/97

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REVIEWED AND APPROVED BY: George Carpenter DATE: 3/31/97

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# EXECUTIVE SUMMARY

On November 28, 1995, Michigan Department of Environmental Quality (MDEQ) Pre-Remedial Group staff collected 14 surficial soil samples from suspected areas of contamination at the Jefferson/Riopelle (JR) property in the City of Detroit.

Analysis of the soil collected from JR property during the Brownfield Redevelopment Assessment (BFRA), detected the presence of benzo(a)pyrene, arsenic, beryllium, lead and manganese. These contaminants of concern were detected at concentrations greater than the Generic Residential Cleanup Criteria of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended (formerly known as the Michigan Environmental Response Act). Because these contaminants were detected at concentrations in excess of the Generic Residential Cleanup Criteria of the NREPA, the JR property qualifies as facility under Part 201. Lead was detected in two samples at concentrations greater than the Generic Industrial Cleanup Criteria of Part 201 of the NREPA.

Based on the findings of the BFRA investigation and the Michigan Department of Community Health (MDCH) Health Consultation Assessment, the following issues should be addressed before or during the redevelopment of the JR property:

- Based on the concentration of the contaminants in the soils of the property, there is little potential for exposure to contaminants at the property under its current use as a park.

- The presence of lead above the Industrial Cleanup Criteria at the property should be confirmed with additional samples and if verified, measures should be taken with respect to responsibilities that may exist under Part 201.

- Excavation for the construction of any buildings on the properties might expose workers or subsequent occupants to subsurface soils. Therefore, soil samples should be collected and analyzed from borings to the depth of any proposed excavation on the properties before the excavation begins. These results should be compared to the Generic Industrial Cleanup Criteria for Direct Contact to soils to determine whether any exposure risk to site workers could occur.

- Any change to the proposed use of the property will require additional sampling, and if any contaminants were detected, the Generic Cleanup Criteria must be met for the direct contact of soils.

# INTRODUCTION

The MDEQ Pre-Remedial Group was contracted via a cooperative agreement with the U. S. Environmental Protection Agency (EPA) to conduct BFRA as part of the Detroit Brownfields Pilot Project. A brownfield is a property, or a portion thereof, that has actual or perceived contamination and an active potential for redevelopment or reuse. Properties which meet these qualifications have been selected by the City of Detroit to be investigated in the Detroit Brownfields Pilot Project.

BFRAs are intended to provide information on abandoned properties where potential environmental contamination may be acting as an impediment to future redevelopment activities. MDEQ Pre-Remedial Group staff conduct environmental investigations to determine the types and locations of past and present industrial activities, potential environmental migration pathways of concern, types and concentrations of potential contaminants and the need for remedial and/or removal actions on the property.

The BFRA included file and information searches, a reconnaissance inspection of the property, and the collection of surficial soil samples.

# PROPERTY BACKGROUND

## Property Description

The JR property is located on the north side of East Jefferson Avenue, and the south side of East Larned Avenue east of vacated Riopelle Avenue in the City of Detroit, Wayne County. The property is a part of the Lafayette Park. See Figure 1 for the Property Location Map.

## Property History

Early Sanborn maps dating back to 1897 show at that time that the property contained large residential dwellings that fronted on East Jefferson Avenue.

By 1921, the large dwellings on the property with the exception of the northwest corner of East Jefferson and Riopelle had been converted to rooming houses. The building on the northwest corner became two meat shops with a hog pen and a slaughter house in the rear. By 1950, the hog pen and the slaughter house were replaced by a garage and a silver plating shop.

The Jefferson/Riopelle property was acquired by the City of Detroit in the mid 1950s as a part of the Lafayette Park Urban Project, and the buildings were demolished at about that time.

## PROCEDURES AND RESULTS

On November 28, 1995, the investigation team conducted a reconnaissance inspection of the JR property and surrounding area to make observations to aid in characterizing the property. The reconnaissance inspection included a walk-through of the property to determine appropriate health and safety requirements for conducting investigation activities. The team also determined sampling locations during the reconnaissance inspection. Upon completion of the reconnaissance inspection, the investigation team conducted the sampling task.

### Reconnaissance Inspection Observations

The JR property is approximately 100,000 square feet and is part of the Lafayette Park Urban Project. The property is covered with grass and several benches were observed on the property. There was no sign of oil or otherwise stained soils. The park is well maintained. See Figure 2 Property Features Map. Photographs of the JR property taken during the BFRA are provided in Appendix A.

As part of the BFRA, the MDCH accompanied the investigation team during the reconnaissance inspection and performed a Health Consultation Assessment. The results of the MDCH assessment can be found in the Health Consultation of the JR property in Appendix B.

### Sampling Procedures and Results

On November 28, 1995, MDEQ Pre-Remedial Group staff collected surficial soil samples according to a predetermined grid at the JR property. These samples were collected by the investigation team to determine whether EPA Target Compound List compounds (organic compounds) and Target Analyte List analytes (inorganic compounds) were present at the properties.

Standard MDEQ collection and decontamination procedures, as outlined in the work plan, were adhered to during the collection of all samples. All samples were packaged and shipped in accordance with. EPA required procedures and all EPA Quality Assurance/Quality Control procedures were followed. Laboratory analytical data for all the sample analyses are provided in Appendix C.

Surficial Soil Samples

The intent of the surficial soil sampling was to determine the potential for possible contaminant migration from potential source areas and the potential health and safety concerns, if any, associated with the surficial soils at the property. Fourteen (14) surficial soil samples were collected from JR property to characterize any possible contamination on the property and to determine any direct contact threats posed to nearby residential populations and future workers from these soils.

All surficial soil samples were collected using stainless steel trowels according to the procedures outlined in the work plan. See Figure 3 for a map showing Surficial Soil Sample Locations. For a Description of the Surficial Soil Sample Locations and the Sample Characteristics, refer to Table 1. Table 2 presents a summary of the Surficial Soil Samples Analytical Results with comparisons to the Generic Cleanup Criteria of Part 201 of the NREPA.

## DISCUSSION

Analysis of the soil samples collected from the JR property during the BFRA detected the presence of benzo (a) pyrene, 3,400 ug/kg; arsenic, 5.6-13.5 mg/kg; lead, 531-674 mg/kg; manganese, 2,140 mg/kg and beryllium 5.6 mg/kg . These contaminants of concern were detected at concentrations greater than the Generic Residential Cleanup Criteria of Part 201 of the NREPA. Because these contaminants were detected at concentrations in excess of the Generic Residential Cleanup Criteria, the JR property qualifies as a facility under Part 201. The concentrations of lead were also found to be greater than the Generic Industrial Cleanup Criteria of Part 201 of the NREPA.

Based on the findings of the BFRA investigation and the MDCH Health Consultation Assessment, the following issues should be addressed before or during the redevelopment of the JR property.

- The contaminants of concern should be considered with respect to responsibilities that may exist under Part 201. The nature of any response activity that may be required is dependent on the intended use of the property and the party's liability under Part 201. A person who is liable for the contamination is required to achieve cleanup of the property consistent with the cleanup criteria. The relevant criteria are a function of the intended property use, such as residential, commercial or industrial. A non-liable developer is not required to implement a cleanup to achieve the appropriate cleanup criteria. However, a non-liable party must comply with the "due care" provisions specified in Section 7a of Part 201. Section 7a requires that the contamination must not be exacerbated, that care must be taken to assure that the unacceptable exposure do not occur as a result of the use of the property, and that reasonable precautions be taken against the acts of third parties. Further details about cleanup criteria and due care provisions may be obtained by contacting the MDEQ Environmental Response Division at the Livonia District Office, 313-953-0241.

- Based on the concentration of the contaminants in the soils of the property, there is little potential for exposure to contaminants at the property under its current use as a park.

- The presence of lead above the Industrial Cleanup Criteria at the Jefferson/Riopelle property should be confirmed with additional samples and if verified, measures should be taken to prevent workers exposure during property redevelopment.

- Excavation for the construction of any buildings on the properties might expose workers or subsequent occupants to subsurface soils. Therefore, soil samples should be collected and analyzed from borings to the depth of any proposed excavation on the properties before the excavation begins. These results should be compared to the Generic Industrial Cleanup Criteria for Direct Contact to soils to determine whether any exposure risk to site workers could occur.

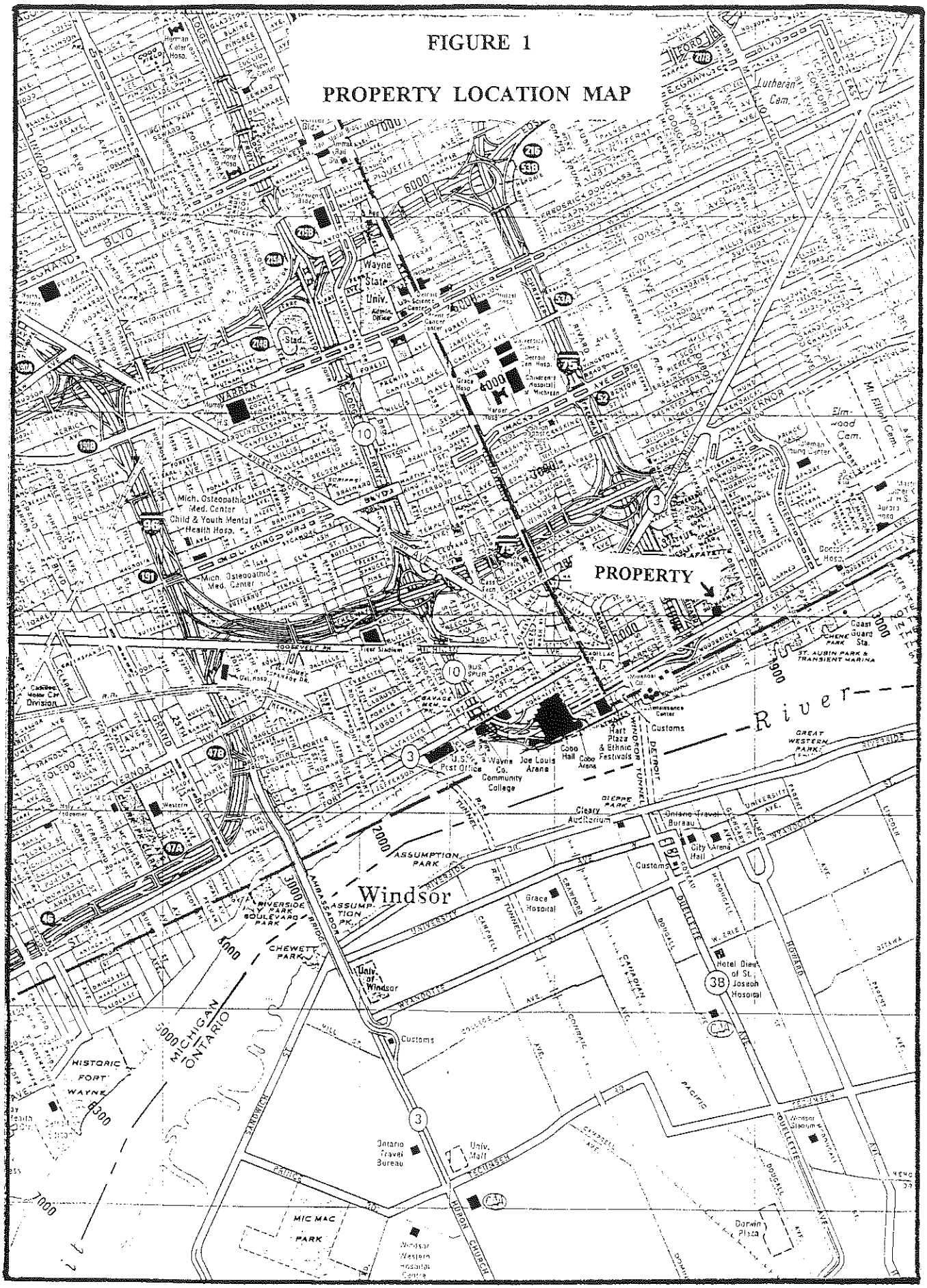
# BIBLIOGRAPHY

1. Michigan Department of Environmental Quality, Environmental Response Division, Superfund Section, Pre-Remedial Site Files, Jefferson/Riopelle.

2. Michigan Department of Community Health, Health Consultation for Jefferson/Riopelle.

# FIGURE 1

## PROPERTY LOCATION MAP



## FIGURE 2

## PROPERTY FEATURES MAP

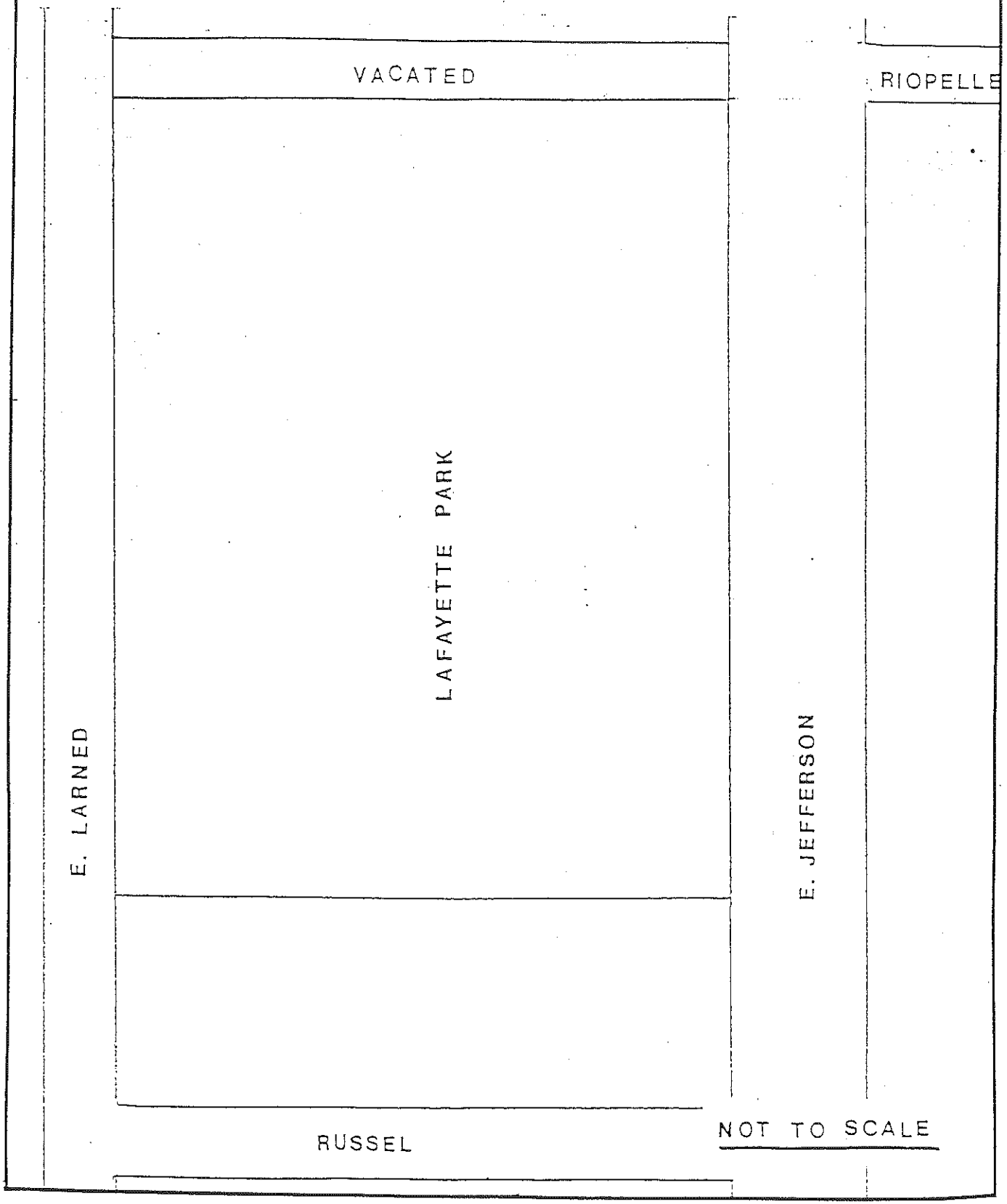
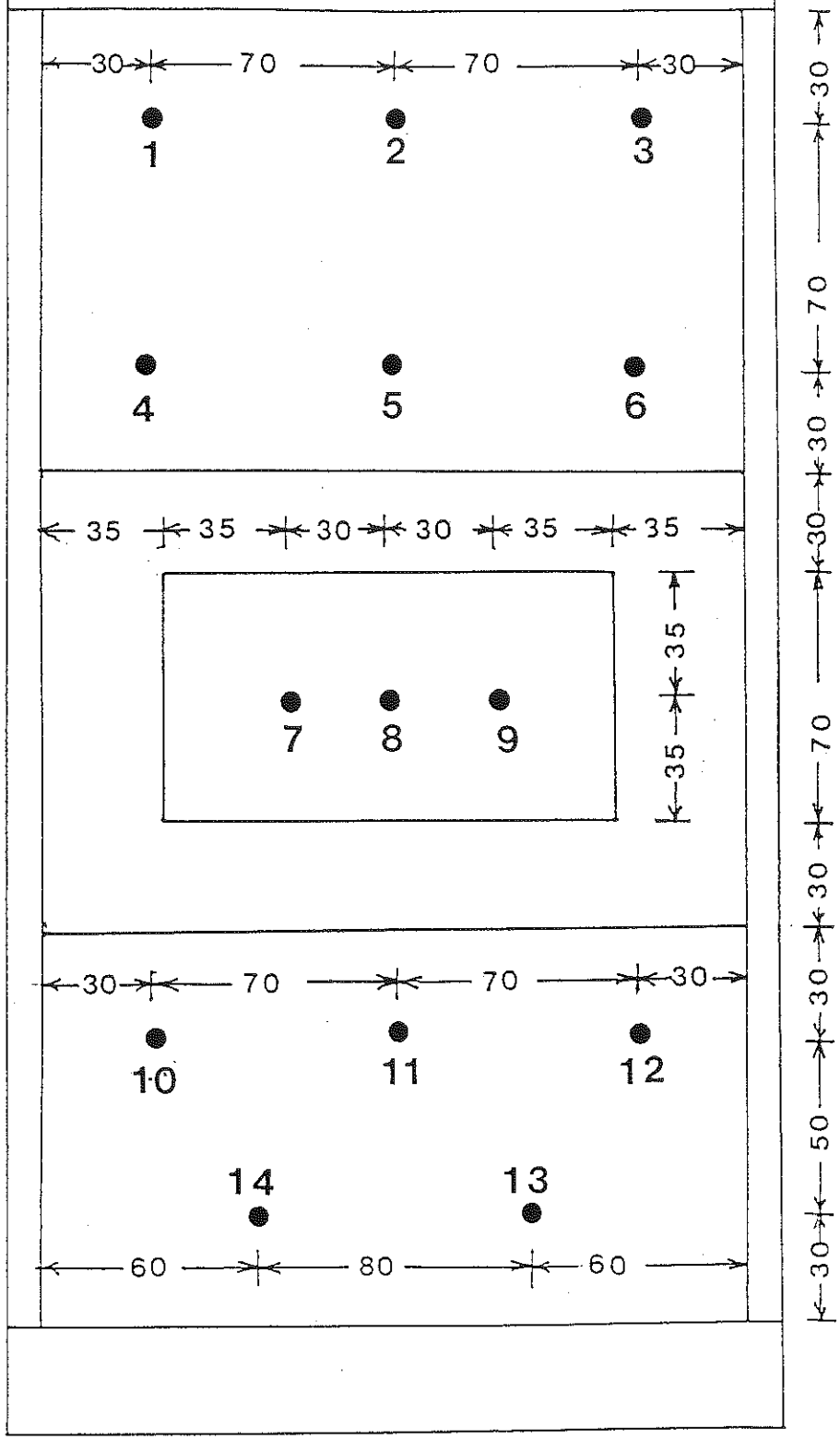


FIGURE 3

SURFICIAL SOIL SAMPLE LOCATIONS




NOT TO SCALE

## TABLE 1

## SOIL SAMPLE DESCRIPTIONS

| SAMPLE# | LOCATION | APPEARANCE | DEPTH | DESIGNATION |
|---|---|---|---|---|
| SS1 | See Figure 3 | Dark brown, med. grained soil w/ some pebbles | 1-6 in | Shallow grab sample |
| SS2 | See Figure 3 | Dark, med. grained soil w/ some small gravel | 1-6 in | Shallow grab sample |
| SS3 | See Figure 3 | Dark, med. grained soil w/ some gravel | 0-3 in | Shallow grab sample |
| SS4 | See Figure 3 | Dark, med. grained soil w/ clay | 0-24 in | Shallow grab sample |
| SS5 | See Figure 3 | Dark, med. grained soil w/ clay, red brick pieces | 0-12 in | Shallow grab sample |
| SS6 | See Figure 3 | Dark, med. grained soil w/ clay, red brick pieces | 0-12 in | Shallow grab sample |
| SS7 | See Figure 3 | Dark, med. grained soil | 0-3 in | Shallow grab sample |
| SS8 | See Figure 3 | Dark, med. grained soil w/ some clay | 0-6 in | Shallow grab sample |
| SS9 | See Figure 3 | Dark, med. grained soil | 0-3 in | Shallow grab sample |
| SS10 | See Figure 3 | Dark, med. grained soil | 0-3 in | Shallow grab sample |
| SS11 | See Figure 3 | Dark, med. grained soil w/ clay, red brick pieces | 0-6 in | Shallow grab sample |
| SS12 | See Figure 3 | Dark, med. grained soil | 0-3 in | Shallow grab sample |

## TABLE 1 (CONT.)

## SOIL SAMPLE DESCRIPTIONS

| SAMPLE# | LOCATION | APPEARANCE | DEPTH | DESIGNATION |
|---|---|---|---|---|
| SS13 | See Figure 3 | Dark, med. grained soil w/ some clay | 0-6 in | Shallow grab sample |
| SS14 | See Figure 3 | Dark, med. grained soil w/ some clay | 0-6 in | Shallow grab sample |

## TABLE 2

## SOIL SAMPLE SUMMARY

| SAMPLE # | CONTAMINANT | SAMPLE CONCENTRATION | PART 201 RESIDENTIAL DIRECT CONTACT CLEANUP CRITERIA | PART 201 INDUSTRIAL DIRECT CONTACT CLEANUP CRITERIA |
|---|---|---|---|---|
| SS1 | No contaminants detected at or above Part 201 criteria in this sample. | | | |
| SS2 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Beryllium | 5.6 | 2.3 | 35 |
| | Manganese | 2,140 | 2,000 | 22,000 |
| | Lead | 674 | 400 | 400 |
| SS3 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 6.1 | 5.5 | 83 |
| SS4 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 7.7 | 5.5 | 83 |
| SS5 | *Semi-volatiles* | *(µg/kg)* | *(µg/kg)* | *(µg/kg)* |
| | Benzo(a)pyrene | 3,400E | 1,400 | 21,000 |
| | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 13.5 | 5.5 | 83 |
| SS6 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 9.4 | 5.5 | 83 |
| SS7 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 6.6 | 5.5 | 83 |
| SS8 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 6.9 | 5.5 | 83 |

## TABLE 2

## SOIL SAMPLE SUMMARY (CONT.)

| SAMPLE # | CONTAMINANT | SAMPLE CONCENTRATION | PART 201 RESIDENTIAL DIRECT CONTACT CLEANUP CRITERIA | PART 201 INDUSTRIAL DIRECT CONTACT CLEANUP CRITERIA |
|---|---|---|---|---|
| **SS9** | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 7.7 | 5.5 | 83 |
| **SS10** | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 12.6 | 5.5 | 83 |
| **SS11** | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 7.5 | 5.5 | 83 |
| | Lead | 531 | 400 | 400 |
| **SS12** | No contaminants detected at or above Part 201 criteria in this sample. | | | |
| **SS13** | No contaminants detected at or above Part 201 criteria in this sample. | | | |
| **SS14** | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 5.6 | 5.5 | 83 |

µg/kg = microgram/kilogram (parts per billion (ppb)).
mg/kg = milligram/kilogram (parts per million (ppm)).

A total of fourteen (14) surficial soil samples were collected during the BFRA.

# APPENDIX A

# BFRA PROPERTY PHOTOGRAPHS

# FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 1 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1100

DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-1 (Formerly SS-17)


DESCRIPTION: Photo of Soil Sample one (Formerly Soil Sample seventeen).

DATE: 11/28/95

TIME: 1100

DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-1 (Formerly SS-17)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 2 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1110

DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-2 (Formerly SS-18)


DESCRIPTION: Photo of Soil Sample two (Formerly Soil Sample eighteen)

DATE: 11/28/95

TIME: 1110

DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-2 (Formerly SS-18)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 3 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1145

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-3 (Formerly SS-19)


DESCRIPTION: Photo of Soil Sample three (Formerly Soil Sample nineteen).

DATE: 11/28/95

TIME: 1145

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-3 (Formerly SS-19)


DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 4 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1155

DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-4 (Formerly SS-20)


DESCRIPTION: Photo of Soil Sample four (Formerly Soil Sample twenty).

---

DATE: 11/28/95

TIME: 1155

DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-4 (Formerly SS-20)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 5 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1205

DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-5 (Formerly SS-21)


DESCRIPTION: Photo of Soil Sample five (Formerly Soil Sample twenty-one).

---

DATE: 11/28/95

TIME: 1205

DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-5 (Formerly SS-21)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 6 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1220

DIRECTION OF PHOTOGRAPH: NE

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-6 (Formerly SS-22)


DESCRIPTION: Photo of Soil Sample six (Formerly Soil Sample twenty-two).

---

DATE: 11/28/95

TIME: 1220

DIRECTION OF PHOTOGRAPH: NE

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SS-6 (Formerly SS-22)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 7 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1325

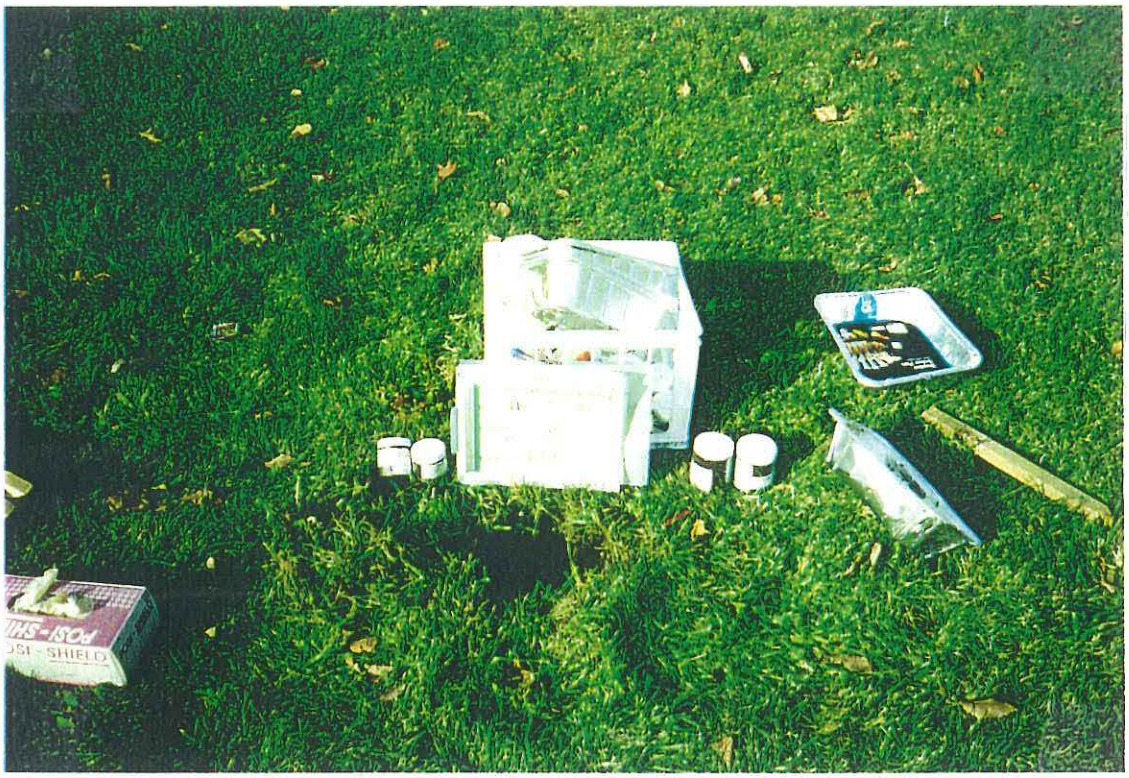
DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-7 (Formerly SS-23)



DESCRIPTION: Photo of Soil Sample seven (Formerly Soil Sample twenty-three).

DATE: 11/28/95

TIME: 1325

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-7 (Formerly SS-23)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 8 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1340

DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-8 (Formerly SS-24)


DESCRIPTION: Photo of Soil Sample eight (Formerly Soil Sample twenty-four).

DATE: 11/28/95

TIME: 1340

DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-8 (Formerly SS-24)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 9 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1400

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-9 (Formerly SS-25)


DESCRIPTION: Photo of Soil Sample nine (Formerly Soil Sample twenty-five).

DATE: 11/28/95

TIME: 1400

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-9 (Formerly SS-25)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 10 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1445

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-10 (Formerly SS-26)


DESCRIPTION: Photo of Soil Sample ten (Formerly Soil Sample twenty-six).

---

DATE: 11/28/95

TIME: 1445

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-10 (Formerly SS-26)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 11 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1500

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-11 (Formerly SS-27)


DESCRIPTION: Photo of Soil Sample elevn (Formerly Soil Sample twenty-seven).

DATE: 11/28/95

TIME: 1500

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-11 (Formerly SS-27)

DESCRIPTION: Long view of sample location.

# FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 12 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1525

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-12 (Formerly SS-28)

DESCRIPTION: Photo of Soil Sample twelve (Formerly Soil Sample twenty-eight).

DATE: 11/28/95

TIME: 1525

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-12 (Formely SS-28)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 13 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1615

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-13 (Formerly SS-29)


DESCRIPTION:
Photo of Soil Sample thirteen (Formerly Soil Sample twenty-nine).

---

DATE: 11/28/95

TIME: 1615

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-13 (Formerly SS-29)

DESCRIPTION:
Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/RIOPELLE** PAGE: 14 OF: 14

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1555

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-14 (Formerly SS-30)


DESCRIPTION: Photo of Soil Sample fourteen (Formerly Soil Sample thirty).

DATE: 11/28/95

TIME: 1555

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Fairbanks

SAMPLE ID: SS-14 (Formerly SS-30)

DESCRIPTION: Long view of sample location.

# APPENDIX B

# MDCH HEALTH CONSULTATION REPORT

# APPENDIX C

# CHEMICAL ANALYSIS OF BFRA DATA

## SAMPLE NUMBERS FOR

## JEFFERSON/RIOPELLE

| NEW SAMPLE # | OLD SAMPLE # | ORG. TRAFFIC REPORT # | INORG. TRAFFIC REPORT # |
|---|---|---|---|
| SS1 | SS17 | EAST7 | MEAGM7 |
| SS2 | SS18 | EAST8 | MEAGM8 |
| SS3 | SS19 | EAST9 | MEAGM9 |
| SS4 | SS20 | EASW0 | MEAGN0 |
| SS5 | SS21 | EASW1 | MEAGN1 |
| SS6 | SS22 | EASW2 | MEAGN2 |
| SS7 | SS23 | EASW3 | MEAGN3 |
| SS8 | SS24 | EASW4 | MEAGN4 |
| SS9 | SS25 | EASW5 | MEAGN5 |
| SS10 | SS26 | EASW6 | MEAGN6 |
| SS11 | SS27 | EASW7 | MEAGN7 |
| SS12 | SS28 | EASW8 | MEAGN8 |
| SS13 | SS29 | EASW9 | MEAGN9 |
| SS14 | SS30 | EASX0 | MEAGP0 |

BROWNFIELD REDEVELOPMENT ASSESSMENT REPORT

FOR

**JEFFERSON/CHENE**

**PROPERTY**

DETROIT, MICHIGAN

**REVISED**

MARCH 31, 1997

REPORT PREPARED BY: Nabil Seif DATE: 3/31/97

Nabil Seif
Pre-Remedial Group, Site Management Unit 1

REVIEWED AND APPROVED BY: George Carpenter DATE: 3/31/97

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Lansing, Michigan 48909

# EXECUTIVE SUMMARY

On November 28, 1995, Michigan Department of Environmental Quality (MDEQ) Pre-Remedial Group staff collected 11 surficial soil samples and 5 soil boring samples from suspected areas of contamination at the Jefferson/Chene (JC) property in the City of Detroit.

Analysis of the soil and soil boring samples collected from JC property during the Brownfield Redevelopment Assessment (BFRA), detected the presence of benzo (a) pyrene, arsenic, and manganese. These contaminants of concern were detected at concentrations greater than the Generic Residential Cleanup Criteria of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended (formerly known as the Michigan Environmental Response Act). Because these contaminants were detected at concentrations in excess of the Generic Residential Cleanup criteria of the NREPA, the JC property qualifies as facility under Part 201. No contaminants were detected at concentrations greater than the Generic Industrial Cleanup Criteria of Part 201 of the NREPA.

Based on the findings of the BFRA investigation and the Michigan Department of Community Health (MDCH) Health Consultation Assessment, the following issues should be addressed before or during the redevelopment of the JC property:

- Based on the concentration of the contaminants in the soils of the property, there is little potential for exposure to contaminants at the property under its current use as a parking lot.

- Excavation for the construction of any buildings on the properties might expose workers or subsequent occupants to subsurface soils. Therefore, soil samples should be collected and analyzed from borings to the depth of any proposed excavation on the properties before the excavation begins. These results should be compared to the Generic Industrial Cleanup Criteria for Direct Contact to soils to determine whether any exposure risk to site workers could occur.

- If the intended use of the property is residential, the contamination of concern should be addressed by removal or mitigation of contaminated soils to the Residential Cleanup Criteria

## INTRODUCTION

The MDEQ Pre-Remedial Group was contracted via a cooperative agreement with the U. S. Environmental Protection Agency (EPA) to conduct BFRA as part of the Detroit Brownfields Pilot Project. A brownfield is a property, or a portion thereof, that has actual or perceived contamination and an active potential for redevelopment or reuse. Properties which meet these qualifications have been selected by the city of Detroit to be investigated in the Detroit Brownfields Pilot Project.

BFRAs are intended to provide information on abandoned properties where potential environmental contamination may be acting as an impediment to future redevelopment activities. MDEQ Pre-Remedial Group staff conduct environmental investigations to determine the types and locations of past and present industrial activities, potential environmental migration pathways of concern, types and concentrations of potential contaminants and the need for remedial and/or removal actions on the property. The BFRA included file and information searches, a reconnaissance inspection of the property, and the collection of surficial soil and soil boring samples.

## PROPERTY BACKGROUND

### Property Description

The JC property is located on the south side of East Jefferson Avenue east of Chene Street and consists of reversed 'L' shaped parcel that extends from the south side of East Jefferson Avenue to the north side of Franklin Street and west to the northeast corner of Franklin and Chene Streets in the City of Detroit, Wayne County. See Figure 1 for the Property Location Map.

### Property History

Early Sanborn maps dating back to 1897 show at that time this parcel contained large residential dwellings that fronted on East Jefferson Avenue. In 1897 the northeast corner of Chene and Franklin Streets was the site of the Detroit Gas Company Chene Street Station that contained a 200,000 cubic foot "Gasometer" a coal gas storage facility. In about 1916, the "Gasometer" was replaced by a metal working factory that produced unknown products. The factory extended along the east side of Chene from East Jefferson to Franklin. The facility contained a machine shop, tin shop, forge shop and hardening room. The 1922 Sanborn map shows that the current City of Detroit Department of Public Works (DPW) maintenance building had been built, however the original occupant is not known. The 1969 Sanborn map shows that the DPW maintenance building had taken over the northeast corner of Chene and Franklin Streets and a gasoline station occupied the southeast corner of Jefferson and Chene. The DPW facility operated until the late 1970s and was demolished in the mid 1980s.

## PROCEDURES AND RESULTS

On November 28, 1995, the investigation team conducted a reconnaissance inspection of the JC property and surrounding area to make observations to aid in characterizing the property. The reconnaissance inspection included a walk-through of the property to determine appropriate health and safety requirements for conducting investigation activities. The team also determined sampling locations during the reconnaissance inspection. Upon completion of the reconnaissance inspection, the investigation team conducted the sampling task.

### Reconnaissance Inspection Observations

The property is approximately 145,000 square-feet and is currently a vacant lot covered with gravel. There was no sign of oil stained soils, however, small piles of sliced potatoes and other vegetable matter were found on the center of the parcel. There is a Shell Gas Station on the northwest corner of the parcel. See Figure 2 for the Property Features Map. Photographs of the JC properties taken during the BFRA are provided in Appendix A.

As part of the BFRA, the MDCH accompanied the investigation team during the reconnaissance inspection and performed a Health Consultation Assessment. The results of the MDCH assessment can be found in the Health Consultation of the JRJC properties in Appendix B.

### Sampling Procedures and Results

On November 28, 1995, MDEQ Pre-Remedial Group staff collected surficial soil samples and soil boring samples according to a predetermined grid at the JC property. These samples were collected by the investigation team to determine whether EPA Target Compound List compounds (organic compounds) and Target Analyte List analytes (inorganic compounds) were present at the properties.

Standard MDEQ collection and decontamination procedures, as outlined in the work plan, were adhered to during the collection of all samples. All samples were packaged and shipped in accordance with. EPA required procedures and all EPA quality assurance/quality control procedures were followed. Laboratory analytical data for all the sample analyses are provided in Appendix C.

#### Surficial Soil Samples

The intent of the surficial soil sampling was to characterize any possible contamination on the property, determine the potential for possible contaminants migration from potential source areas and identify the potential health and safety concerns, such as direct contact threats posed to nearby residential populations and future workers from these soils, associated with the surficial soils at the property.

Eleven (11) surficial soil samples were collected from JC property. All surficial soil samples were collected using stainless steel trowels according to the procedures outlined in the work plan. See Figure 3 for a map showing Surficial Soil Sample Locations. For a description of the surficial soil sample locations and the sample characteristics, refer to Table 1. Table 2 presents a summary of the surficial soil samples analytical results with comparisons to the Generic Cleanup Criteria of Part 201 of the NREPA.

Soil Boring Samples

The intent of the soil boring sampling was to characterize any possible contamination in the deep soils on the property, determine if any downward migration had occurred from probable source areas and to determine the potential health and safety concerns, including direct contact threats posed to nearby residentila populations and future workers asociated with the deep soil at the property.

Five (5) soil boring samples (SB1, SB2, SB3, SB4 and SB5) were collected from the JC property. All soil boring samples were collected utilizing a Geoprobe rig according to the procedures outlined in the work plan. See Figure 4 for a map showing Soil Boring Sample Locations. A description of the Soil Boring Sample Locations and the Sample Characteristics can be found in Table 3. Table 4 presents a summary of the Soil Boring Sample Analytical Results with comparisons to the Generic Cleanup Criteria of Part 201 of the NREPA.

Metal Detection Survey

A metal detector was used to survey each deep soil sample location before using the Geoprobe unit. Metal detectors, unlike magnetometers, work on both ferrous and non-ferrous metals; magnetometers only work on ferrous metals. Metal detectors have a relatively short detection range. Metal detectors are limited in depth of penetration and will detect all types of metals. A metal detector responds to the electrical conductivity of metal targets, which is relatively high compared to normal soil conductivities. Small metal objects, like spray cans, can be detected at a distance of about one meter. Because the response of a detector increases with the target's surface area, larger objects, like 55-gallon drums, may be detected at depths of 1-3 meters. Massive piles of metal may be detected at depths up to 3-6 meters. Metal detectors are limited in depth of penetration and will detect all types of metals. No significant metallic responses typical of 55-gallon drums or underground storage tanks were detected at any of the deep soil sample locations.

## DISCUSSION

Analysis of the surficial soil and soil boring samples collected from the JC property during the BFRA detected the presence of benzo (a) pyrene, 1,500-3,800 ug/kg; arsenic, 5.9-7.4 mg/kg; and manganese, 3,990-17,500 mg/kg. These contaminants of concern were detected at concentrations greater than the Generic Residential Cleanup Criteria of Part 201 of the NREPA. Because these contaminants were detected at concentrations in excess of the Generic Residential Cleanup Criteria, the JC property qualifies as a facility under Part 201. No contaminants were found to be greater than the Generic Industrial Cleanup Criteria of Part 201 of the NREPA.

Based on the findings of the BFRA investigation and the MDCH Health Consultation Assessment, the following issues should be addressed before or during the redevelopment of the JRJC properties.

- Based on the concentration of the contaminants in the soils of the property, there is little potential for exposure to contaminants at the properties under its current use as a parking lot.

- The contaminants of concern should be considered with respect to responsibilities that may exist under Part 201. The nature of any response activity that may be required is dependent on the intended use of the property and the party's liability under Part 201. A person who is liable for the contamination is required to achieve cleanup of the property consistent with the cleanup criteria. The relevant criteria are a function of the intended property use, such as residential, commercial or industrial. A non-liable developer is not required to implement a cleanup to achieve the appropriate cleanup criteria. However, a non-liable party must comply with the "due care" provisions specified in Section 7a of Part 201. Section 7a requires that the contamination must not be exacerbated, that care must be taken to assure that the unacceptable exposure do not occur as a result of the use of the property, and that reasonable precautions be taken against the acts of third parties. Further details about cleanup criteria and due care provisions may be obtained by contacting the MDEQ Environmental Response Division at the Livonia District Office, 313-953-0241.

- Excavation for the construction of any buildings on the properties might expose workers or subsequent occupants to subsurface soils. Therefore, soil samples should be collected and analyzed from borings to the depth of any proposed excavation on the properties before the excavation begins. These results should be compared to the Generic Industrial Cleanup Criteria for Direct Contact to soils to determine whether any exposure risk to site workers could occur.

- The potential presence of underground storage tank(s) at the property should be confirmed and, if present should be addressed before redevelopment.

# BIBLIOGRAPHY


1. Michigan Department of Environmental Quality, Environmental Response Division, Superfund Section, Pre-Remedial Site Files, Jefferson/Chene.

2. Michigan Department of Community Health, Health Consultation for Jefferson/Chene

# FIGURE 1

## PROPERTY LOCATION MAP

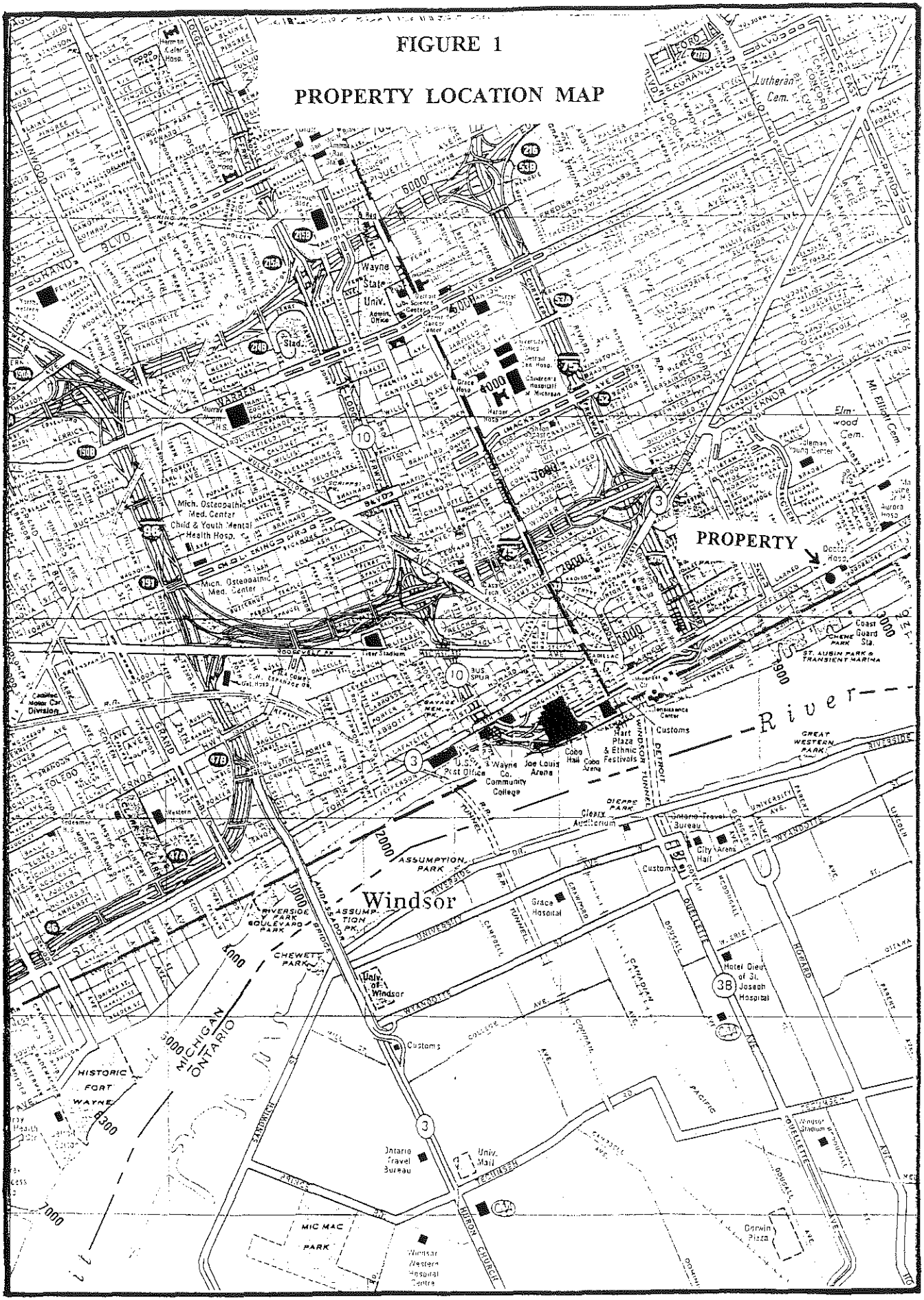


FIGURE 2

PROPERTY FEATURES MAP

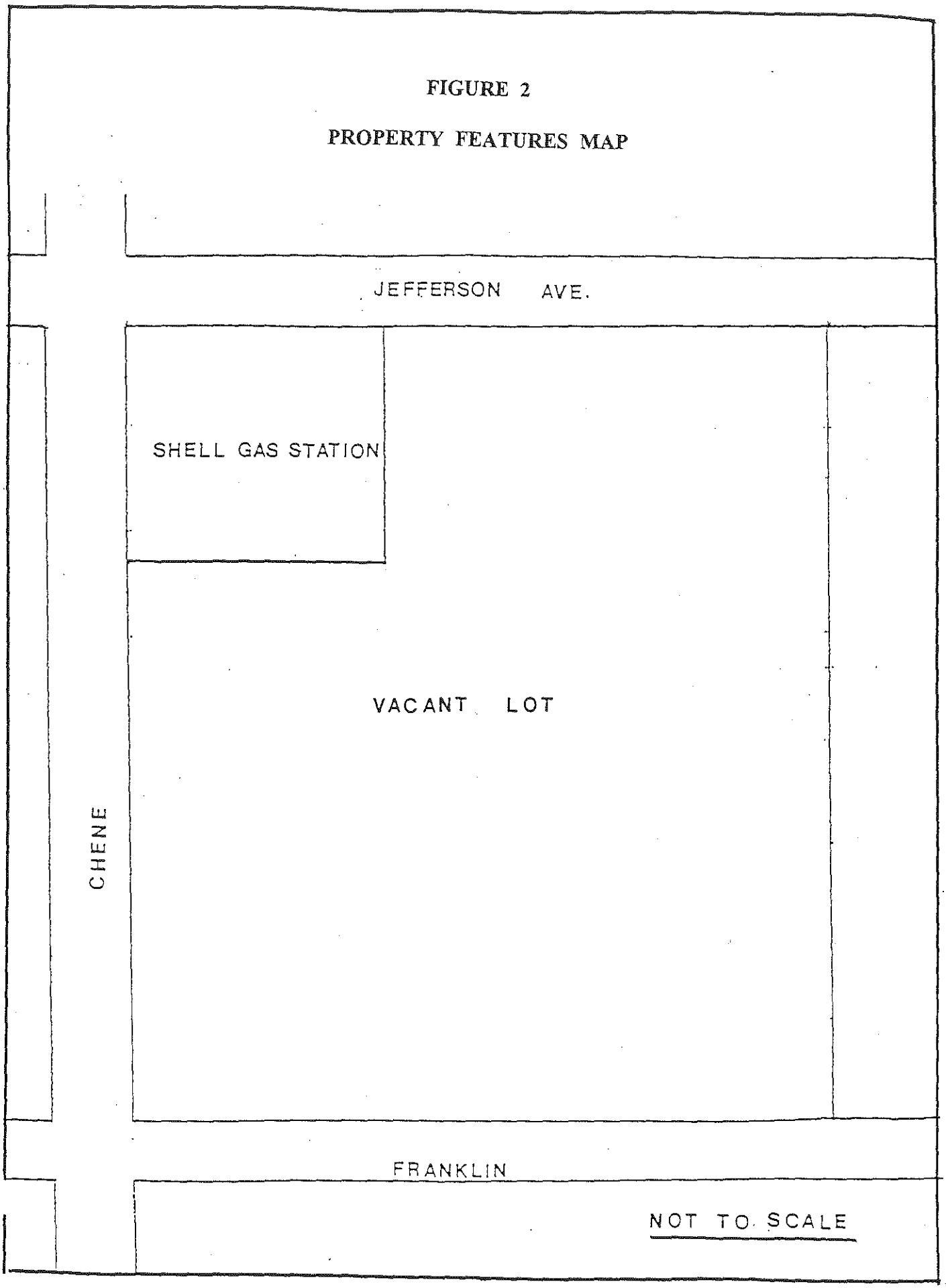


FIGURE 3

SURFICIAL SOIL SAMPLE LOCATIONS

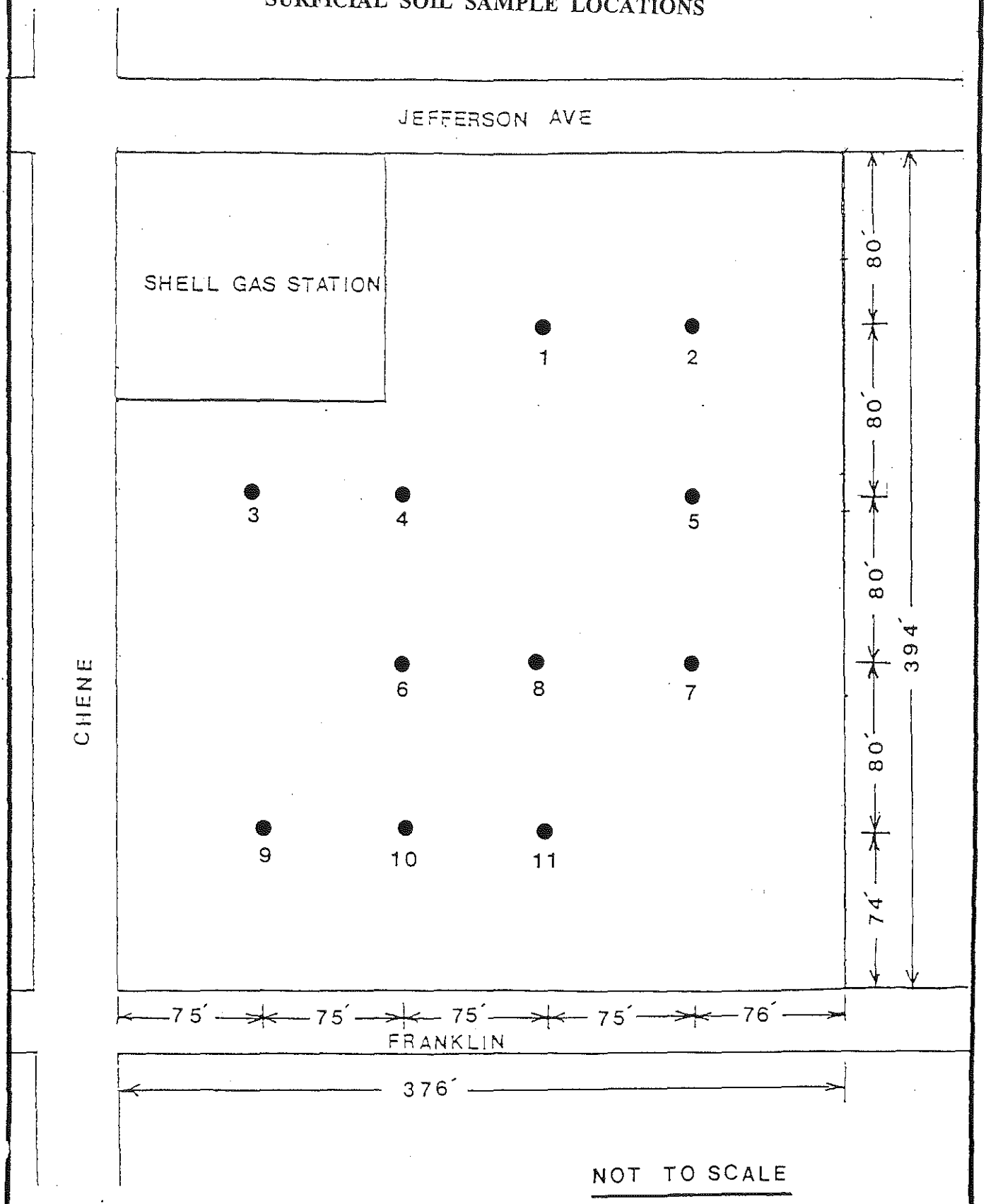
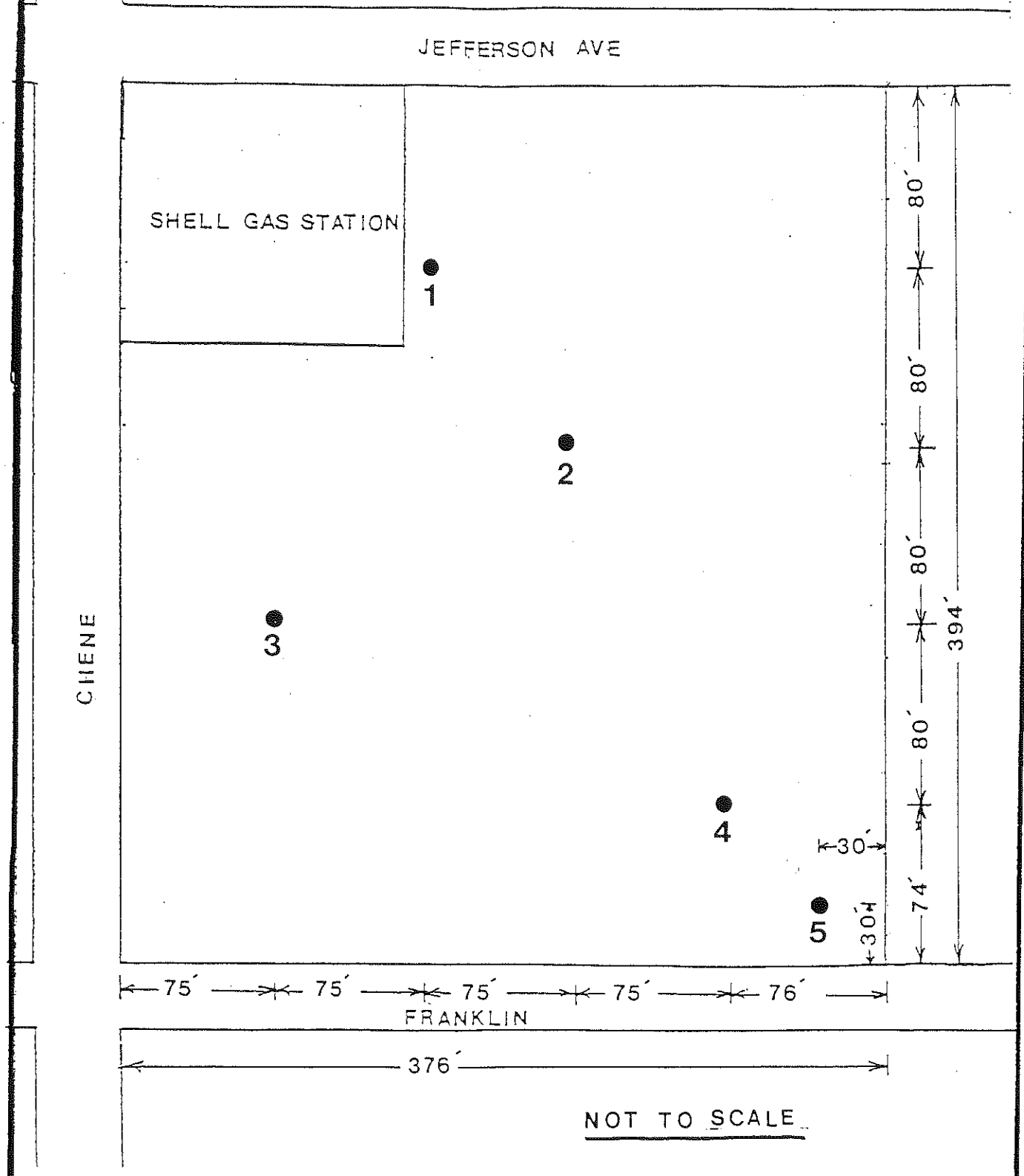


FIGURE 4

SOIL BORING SAMPLE LOCATIONS



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## TABLE 1

## SOIL SAMPLE DESCRIPTIONS

| SAMPLE# | LOCATION | APPEARANCE | DEPTH | DESIGNATION |
|---|---|---|---|---|
| SS1 | See Figure 3 | Gray/dark gray, Greenish gray, silty clay w/ gravel, debris | 8-12 in | Shallow grab sample |
| SS2 | See Figure 3 | Dark gray, fine/med. gravel w/ some sand | 0-1 in | Shallow grab sample |
| SS3 | See Figure 3 | Gray, moist, silty gravel | 0-2 in | Shallow grab sample |
| SS4 | See Figure 3 | Brown/gray, silty clay. w/ some sand | 24-36 in | Deep grab sample |
| SS5 | See Figure 3 | Gray, silty clay, w/ gravel | 32-36 in | Deep grab sample |
| SS6 | See Figure 3 | Gray, brown, silty clay, slightly moist | 10-16 in | Shallow grab sample |
| SS7 | See Figure 3 | Brown clay, debris, brick, slight water on top of moist clay | 12-16 in | Shallow grab sample |
| SS8 | See Figure 3 | Gray/brown, moist clay w/ sand and debris | 10-30 in | Deep grab sample |
| SS9 | See Figure 3 | Moist dark gray to black silty clay w/ traces of sand and gravel | 14-22 in | Deep grab sample |
| SS10 | See Figure 3 | Light brown silty clay w/ traces of sand and gravel - fill, lots of bricks | 10-30 in | Deep grab sample |
| SS11 | See Figure 3 | Gray, moist, clay/ gravel | 0-3 in | Shallow grab sample |

## TABLE 2

## SOIL SAMPLE SUMMARY

| SAMPLE # | CONTAMINANT | SAMPLE CONCENTRATION | PART 201 RESIDENTIAL DIRECT CONTACT CLEANUP CRITERIA | PART 201 INDUSTRIAL DIRECT CONTACT CLEANUP CRITERIA |
|---|---|---|---|---|
| SS1 | *Semi-volatiles* | *(µg/kg)* | *(µg/kg)* | *(µg/kg)* |
| | Benzo(a)pyrene | 1,500 | 1,400 | 21,000 |
| | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 7.3 | 5.5 | 83 |
| SS2 | *Semi-volatiles* | *(µg/kg)* | *(µg/kg)* | *(µg/kg)* |
| | Benzo(a)pyrene | 3,800E | 1,400 | 21,000 |
| | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Manganese | 15,800 | 2,000 | 22,000 |
| SS3 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Manganese | 17,500 | 2,000 | 22,000 |
| SS4 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 6.5 | 5.5 | 83 |
| SS5 | No contaminants detected at or above Part 201 criteria in this sample. | | | |
| SS6 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 6.8 | 5.5 | 83 |
| SS7 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 7.0 | 5.5 | 83 |
| | Manganese | 3,990 | 2,000 | 22,000 |
| SS8 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 5.9 | 5.5 | 83 |
| SS9 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 7.4 | 5.5 | 83 |

## TABLE 2

## SOIL SAMPLE SUMMARY (CONT.)

| SAMPLE # | CONTAMINANT | SAMPLE CONCENTRATION | PART 201 RESIDENTIAL DIRECT CONTACT CLEANUP CRITERIA | PART 201 INDUSTRIAL DIRECT CONTACT CLEANUP CRITERIA |
|---|---|---|---|---|
| SS10 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Arsenic | 7.4 | 5.5 | 83 |
| SS11 | *Inorganics* | *(mg/kg)* | *(mg/kg)* | *(mg/kg)* |
| | Manganese | 3,990 | 2,000 | 22,000 |

µg/kg = microgram/kilogram (parts per billion (ppb)).
mg/kg = milligram/kilogram (parts per million (ppm)).

A total of eleven (11) surficial soil samples were collected during the BFRA.

## TABLE 3

## SOIL BORING SAMPLE DESCRIPTIONS

| SAMPLE# | LOCATION | APPEARANCE | DEPTH | DESIGNATION |
|---|---|---|---|---|
| SS1 | See Figure 4 | Tan-gray, sandy clay w/ pebbles, moist dry hole | 4-8 ft | Soil boring sample |
| SS2 | See Figure 4 | Gray clay w/ sand | 4-6 ft | Soil boring sample |
| SS3 | See Figure 4 | Tan-orange clay | 4-8 ft | Soil boring sample |
| SS4 | See Figure 4 | Tan, gray, green clay w/ some gravel, hydrocarbon odor noticed | 4-8 ft | Soil boring sample |
| SS5 | See Figure 4 | Moist, gray clay w/ some gravel, black sand | 4-8 ft | Soil boring sample |

## TABLE 4

## SOIL BORING SAMPLE SUMMARY

| SAMPLE # | CONTAMINANT | SAMPLE CONCENTRATION | PART 201 RESIDENTIAL DIRECT CONTACT CLEANUP CRITERIA | PART 201 INDUSTRIAL DIRECT CONTACT CLEANUP CRITERIA |
|---|---|---|---|---|
| SS1 | No contaminants detected at or above Part 201 criteria in this sample. | | | |
| SS2 | No contaminants detected at or above Part 201 criteria in this sample. | | | |
| SS3 | No contaminants detected at or above Part 201 criteria in this sample. | | | |
| SS4 | No contaminants detected at or above Part 201 criteria in this sample. | | | |
| SS5 | *Semi-volatiles* | *(µg/kg)* | *(µg/kg)* | *(µg/kg)* |
| | Benzo(a)pyrene | 1,500 | 1,400 | 21,000 |

µg/kg = microgram/kilogram (parts per billion (ppb)).
mg/kg = milligram/kilogram (parts per million (ppm)).

A total of five (5) soil boring samples were collected during the BFRA.

# APPENDIX A

# BFRA PROPERTY PHOTOGRAPHS

# FIELD PHOTOGRAPHY LOG SHEET

N

SITE NAME: **JEFFERSON/CHENE** PAGE: 1 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1145

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-1

DESCRIPTION: Photo of Soil Sample one.

DATE: 11/28/95

TIME: 1145

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-1

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 2 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1130

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-2


DESCRIPTION: Photo of Soil Sample two.

DATE: 11/28/95

TIME: 1130

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 30 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-2

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 3 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1220

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-3

DESCRIPTION: Photo of Soil Sample three.

DATE: 11/28/95

TIME: 1220

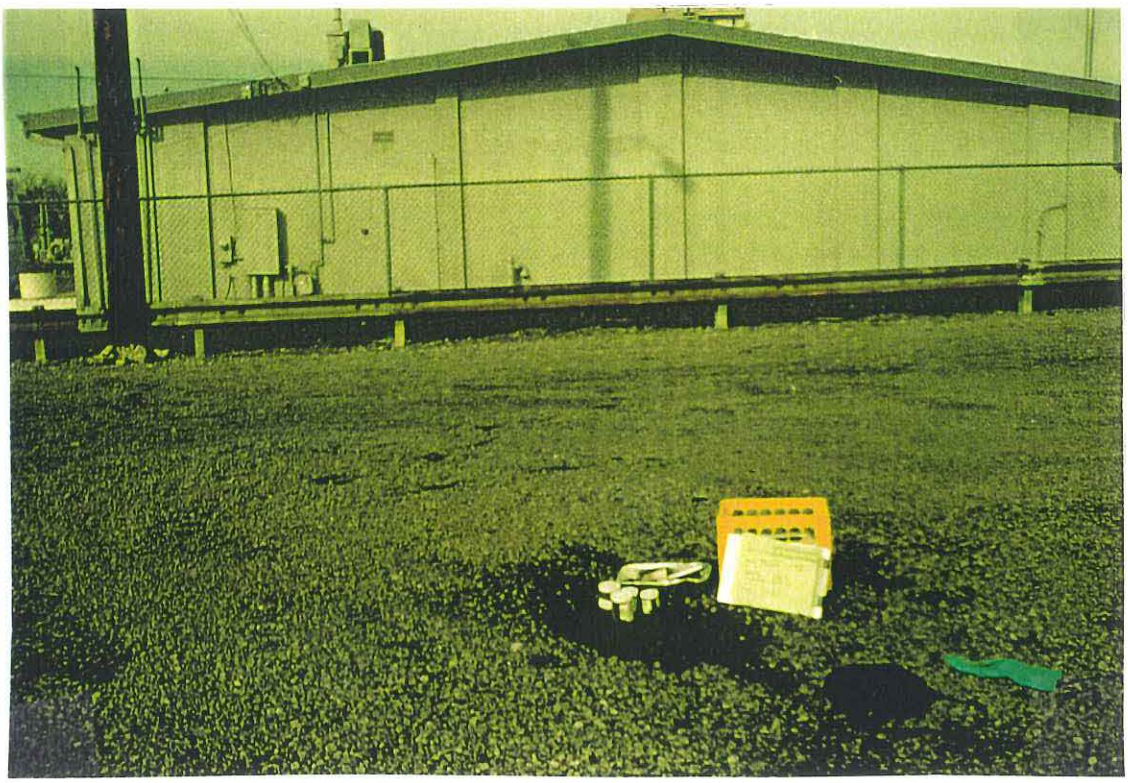
DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-3



DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 4 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1245

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-4

DESCRIPTION: Photo of Soil Sample four.

DATE: 11/28/95

TIME: 1245

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-4


DESCRIPTION: Long view of sample location.

# FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 5 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1430

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-5

DESCRIPTION: Photo of Soil Sample five.

DATE: 11/28/95

TIME: 1430

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-5

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 6 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1345

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-6

DESCRIPTION: Photo of Soil Sample six.

DATE: 11/28/95

TIME: 1345

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-6

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 7 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1505

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-7

DESCRIPTION: Photo of Soil Sample seven.

DATE: 11/28/95

TIME: 1505

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-7

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 8 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1530

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-8

DESCRIPTION: Photo of Soil Sample eight.

DATE: 11/28/95

TIME: 1530

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Partly sunny, and cool.

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-8

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 9 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1555

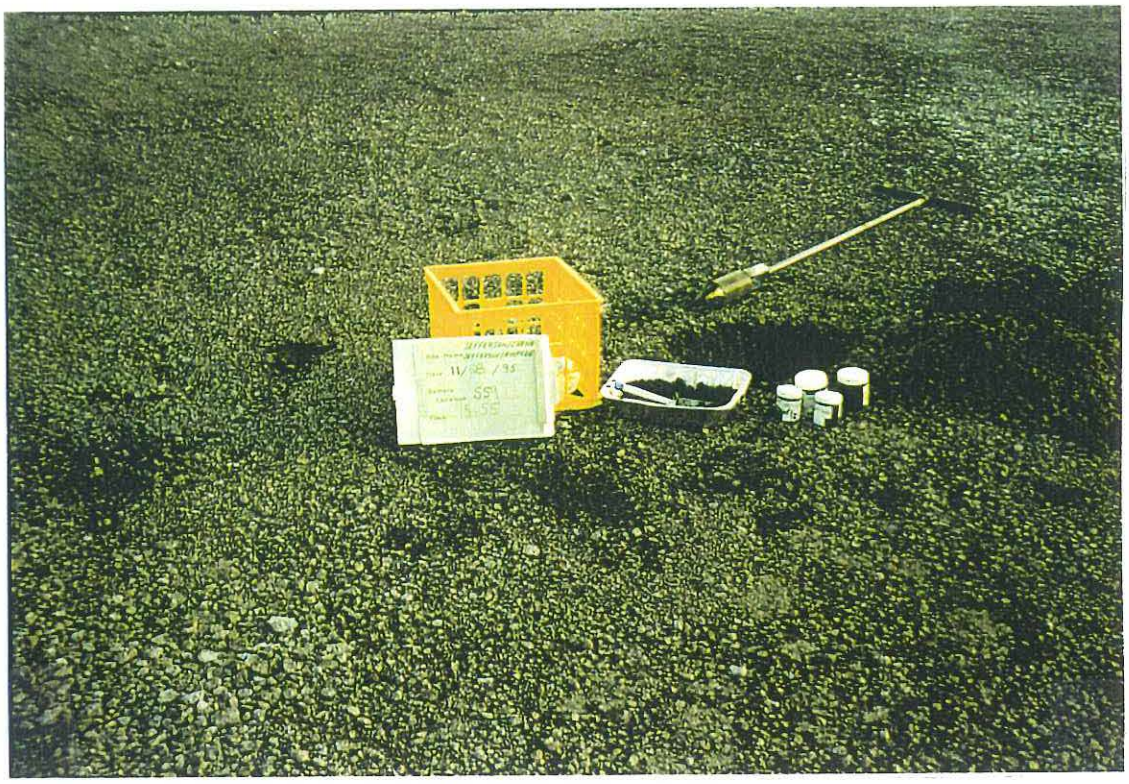
DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Dusk, and clear

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-9



DESCRIPTION: Photo of Soil Sample nine.

DATE: 11/28/95

TIME: 1555

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Dusk, and clear

TEMPERATURE: 35 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-9

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 10 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1620

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Dusk, and clear

TEMPERATURE: 30 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-10

DESCRIPTION: Photo of Soil Sample ten.

DATE: 11/28/95

TIME: 1620

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Dusk, and clear

TEMPERATURE: 30 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-10

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 11 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1615

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Dusk, and clear

TEMPERATURE: 30 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-11

DESCRIPTION: Photo of Soil Sample eleven.

DATE: 11/28/95

TIME: 1615

DIRECTION OF PHOTOGRAPH: N/A

WEATHER CONDITIONS: Dusk, and clear

TEMPERATURE: 30 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SS-11


DESCRIPTION: Long view of sample location.

# FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 12 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1550

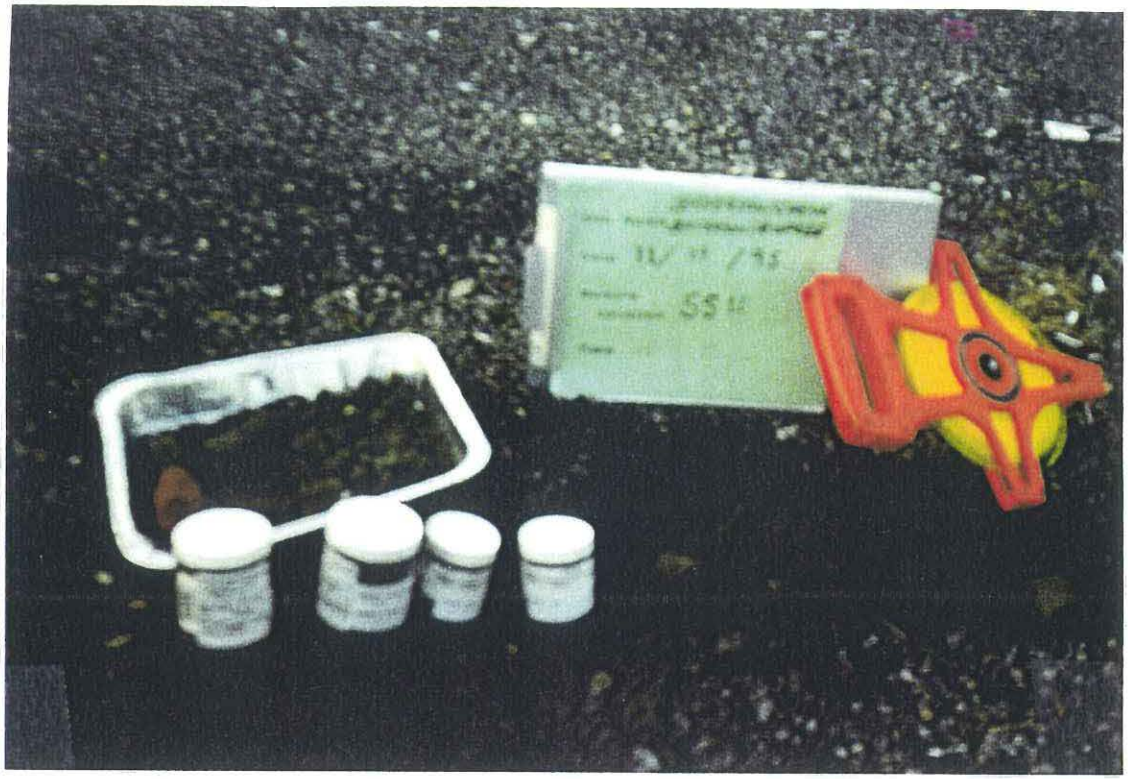
DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Sunny

TEMPERATURE: 32 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SB-1 (Formerly SS-12)



DESCRIPTION: Photo of Soil Boring Sample one (Formerly Soil Sample twelve).

DATE: 11/28/95

TIME: 1550

DIRECTION OF PHOTOGRAPH: NW

WEATHER CONDITIONS: Sunny

TEMPERATURE: 32 F

PHOTOGRAPH BY: Sakowski

SAMPLE ID: SB-1 (Formerly SS-12)

DESCRIPTION: Long view of sample location.

# FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 13 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1500

DIRECTION OF PHOTOGRAPH: S

WEATHER CONDITIONS: Sunny and cold

TEMPERATURE: 30 F

PHOTOGRAPH BY: Ducsay

SAMPLE ID: SB-2 (Formerly SS-13)

DESCRIPTION: Photo of Soil Boring Sample two (Formerly Soil Sample thirteen).

DATE: 11/28/95

TIME: 1500

DIRECTION OF PHOTOGRAPH: S

WEATHER CONDITIONS: Sunny and cool

TEMPERATURE: 30 F

PHOTOGRAPH BY: Ducsay

SAMPLE ID: SB-2 (Formerly SS-13)

DESCRIPTION: Long view of sample location.

# FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 14 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1515

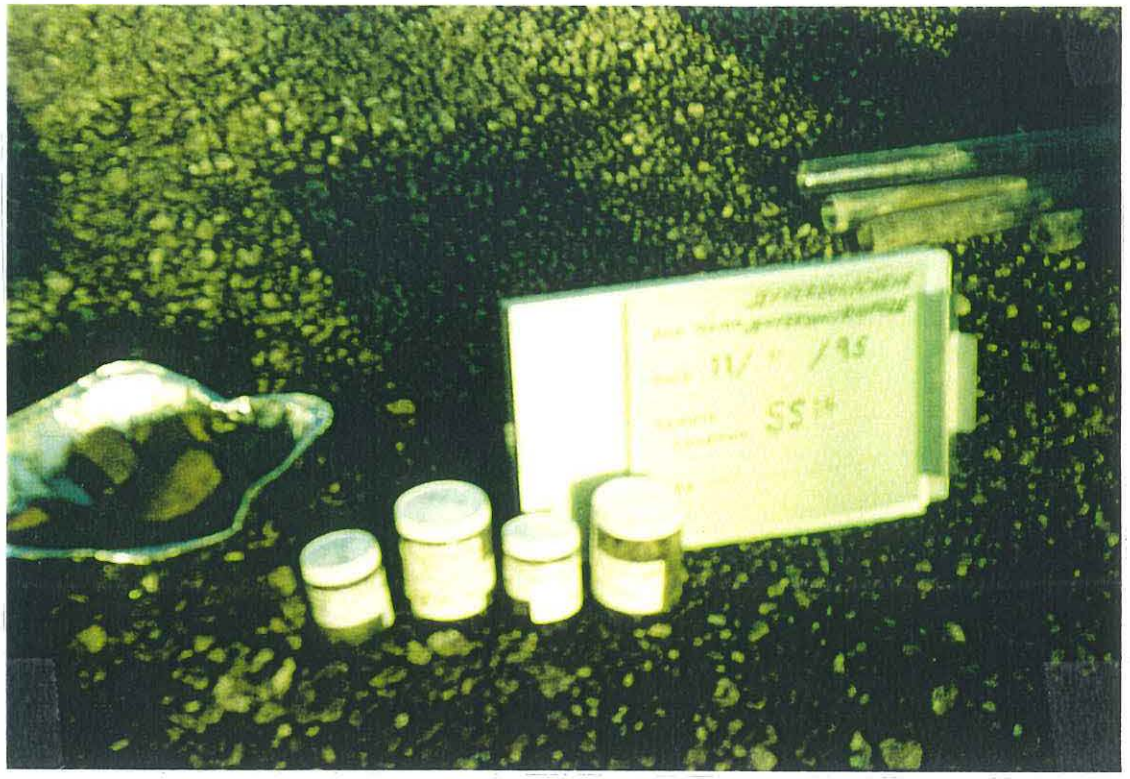
DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Sunny and cool

TEMPERATURE: 32 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SB3 (Formerly SS-14)



DESCRIPTION: Photo of Soil Boring Sample three (Formerly Soil Sample fourteen).

DATE: 11/28/95

TIME: 1515

DIRECTION OF PHOTOGRAPH: N

WEATHER CONDITIONS: Sunny and cool

TEMPERATURE: 32 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SB-3 (Formerly SS-14)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 15 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1630

DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Sunny

TEMPERATURE: 32 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SB-4 (Formerly SS-15)

DESCRIPTION: Photo of Soil Boring Sample four (Formerly Soil Sample fifteen).

DATE: 11/28/95

TIME: 1630

DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Sunny

TEMPERATURE: 32 F

PHOTOGRAPH BY: Chavez

SAMPLE ID: SB-4 (Formerly SS-15)

DESCRIPTION: Long view of sample location.

## FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: **JEFFERSON/CHENE** PAGE: 16 OF: 16

U.S. EPA ID #: **MIB000000002**

DATE: 11/28/95

TIME: 1210

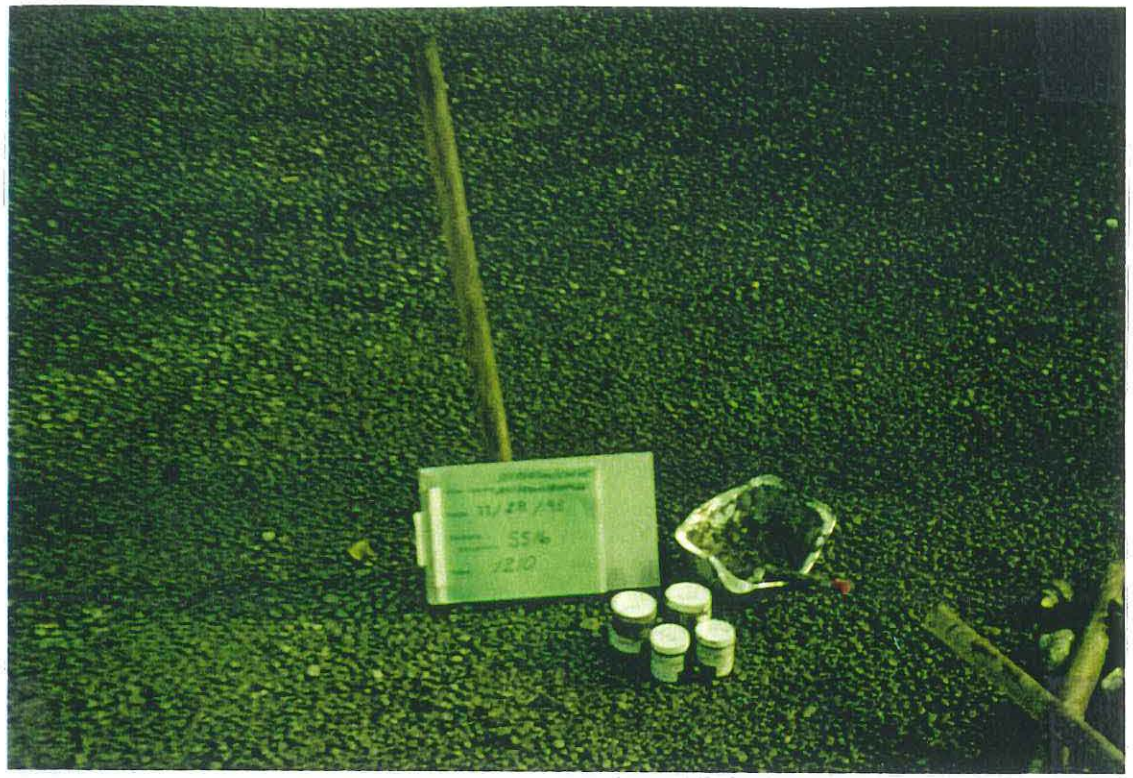
DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 28 F

PHOTOGRAPH BY: Seif

SAMPLE ID: SB-5 (Formerly SS-16)



DESCRIPTION: Photo of Soil Boring Sample five (FormerlySoil Sample sixteen).

DATE: 11/28/95

TIME: 1210

DIRECTION OF PHOTOGRAPH: SW

WEATHER CONDITIONS: Partly cloudy, and cool.

TEMPERATURE: 28 F

PHOTOGRAPH BY: Seif

SAMPLE ID: SB-5 (Formely SS-16)

DESCRIPTION: Long view of sample location.

# APPENDIX B

# MDCH HEALTH CONSULTATION REPORT

# APPENDIX C

# CHEMICAL ANALYSIS OF BFRA DATA

## SAMPLE NUMBERS FOR

## JEFFERSON/CHENE

| NEW SAMPLE # | OLD SAMPLE # | ORG. TRAFFIC REPORT # | INORG. TRAFFIC REPORT # |
|---|---|---|---|
| SS1 | SS1 | EASS1 | MEAGL1 |
| SS2 | SS2 | EASS2 | MEAGL2 |
| SS3 | SS3 | EASS3 | MEAGL3 |
| SS4 | SS4 | EASS4 | MEAGL4 |
| SS5 | SS5 | EASS5 | MEAGL5 |
| SS6 | SS6 | EASS6 | MEAGL6 |
| SS7 | SS7 | EASS7 | MEAGL7 |
| SS8 | SS8 | EASS8 | MEAGL8 |
| SS9 | SS9 | EASS9 | MEAGL9 |
| SS10 | SS10 | EAST0 | MEAGM0 |
| SS11 | SS11 | EAST1 | MEAGM1 |
| SB1 | SS12 | EAST2 | MEAGM2 |
| SB2 | SS13 | EAST3 | MEAGM3 |
| SB3 | SS14 | EAST4 | MEAGM4 |
| SB4 | SS15 | EAST5 | MEAGM5 |
| SB5 | SS16 | EAST6 | MEAGM6 |

**NOTE**

THE CHEMICAL ANALYSIS DATA FOR THE JEFFERSON/CHENE PROPERTY IS INCLUDED IN THE JEFFERSON/RIOPELLE PROPERTY BFRA REPORT.